Section 1 **MANAGEMENT OF CHANGE (MOC)**

ABU:	Plant:	Year:
RLOP	HNC 14 & 15 Plant	2011

MOC No:	Originator:	Date Issued:	Passport No:	EWO No:
24334	Seidlitz, Michael R.	12/13/2011	346659	

Section 2 Reviewer:	MOC Category:	PSM:	MOC Type:	Expiration Date:	Other Temporary Reason
Seidlitz, Michael R.	Leak Seal		Temporary	9/29/2016	

Project/Equipment Title: Leak Seal HNC Reactor Feed Check Valve

Description of Change:

Flange on check valve began to leak.

MOC will be required if the change will:

- ☐ Cause the use of different feed, chemicals or catalysts?
- ☐ Cause the use of different process conditions, process control, instrumentation, and protective devices or affect upstream/downstream plants?
- ☑ Cause the use of new or modified equipment [which is other than inkind]?
- ☐ Alter equipment siting, building, trailer locations, roads or fire protection?
- ☐ Require modifying existing and/or developing new procedures?

Section 2

☑ Simultaneously Begin Construction and Start-up

Stage 1	Pre-Implementation	Dept./Person Responsible	Date Complete	Completed By	References
	Design Review				
	Process Engineering Review				
	Instrumentation Review				
	Control System Review				
	Utilities Review				
	Environmental/Regulatory Review				
	Safety/Regulatory Review				
	Building Permits Review				
	Mechanical Review				
	Inspection Review				
	Metallurgy Review				
	Contruction Review				
	Leak Seal Review	Siebert, Matthew J.	12/15/2011	Siebert, Matthew J.	
	Relief System Review				
	Infrastructure Review				
	PHA/HSE Review	Siebert, Matthew J.	12/14/2011	Siebert, Matthew J.	

Authorization to Implement Change (Begin Construction): Approver: Waldrop, Jason S. Date: 12/16/2011

Stage 2	Pre-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Procedures Review				
	Communication/Training 1	Waldrop, Jason S.	12/16/2011	Waldrop, Jason S.	
	Pre Start-up Safety Review	Perez, Carlos R.	12/16/2011	Perez, Carlos R.	

Authorization to Start-Up Change: Approver: Walker, Fredrick Date: 12/16/2011

Extension of Temporary Change Approved By:

Approver:	Expiration Date:	Extention Reason

Stage 3	Post-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Communication/Training 1	McCall, Patrick D.	2/14/2013	McCall, Patrick D.	
	Process Safety Information	McCall, Patrick D.	2/14/2013	McCall, Patrick D.	

Change in Place - Reviews, Documentation & Testing Complete

Approver:	Date:
Seidlitz, Michael R.	2/14/2013

MOC Cancelled:

Approver:	Date:
Cancellation Reason:	

Note 1: Emergency request for change should be routed by the Approver on the next working day

Retain Original in Division for five Years

You have been assigned a Leak Seal Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered

Leak Seak Number: 24334 **ABU:** RLOP **Leak Seak Number:** HNC 14 &

Person Responsible: Siebert, Matthew J. **Signature:** Siebert, Matthew J. **Completed On:** 12/15/2011

OPERATIONS SECTION: **The Head Operator shall originate a Passport Work Request (coding the WR as a leak seal job), a Leak Seal Review describing in detail the location, type of leak/repair, and material leaking AFTER the Head Operator has confirmed that the piece of equipment to be repaired cannot be taken out of service.**

Project/Equipment Title: Leak Seal HNC Reactor Feed Check Valve

HO: **HO Phone:** **Cannot Be Isolated:**

Line or Equipment #: 14P6-6"-W5 **Location:** **Line Size:** 6"

OpsTemp: 200-400 **Ops Pressure:** >800 **Priority:** High **Process Service:** Hydrocarbon

Safety Precaution

- [x] **Safety Operator Required**
- [ ] **Hazardous** [ ] **Corrosive** [ ] **Flammable** [x] **Critical Job** [ ] **Above Auto-ignition temp**
- [ ] **Acid Suits** [ ] **Breathing Air** [ ] **Above 500F** [ ] **600# or above Flange**

Other Hazards:

- [ ] **Valve Packing** [ ] **Valve Bonnet Flange** [ ] **Valve End Flange**
- [ ] **Pipe Flange** [ ] **Pipe Fitting** [ ] **Pipe (Hole)**
- [ ] **Exchanger Tube Sheet** [ ] **Exchanger Channel Section** [ ] **Exchanger Cover**
- [ ] **Other** [ ] **Staging Required** [ ] **Reinjection**

Passport W/O Number: 346659 **P&ID Number:** 325032 **Repair Type:**

Review/Comments:

MAINTENANCE SECTION: **Maintenance Supervisor shall inspect the component/assembly to be repaired to confirm that it cannot be sealed without leak sealing materials and procedures.**

Routine Maint Supr: Kavanagh, Steven A. **Phone:** **Notified On:** 12/14/2011 **Maint Supr:** Kavanagh, Steven

Review/Comments: Leak source is internal seal ring; cannot be mitigated without leak seal.

INSPECTION SECTION:

Inspector Name: Curtis, Scott P. **Phone:** 2.2488 **Notified On:** 12/14/2011 **Inspector :** Curtis, Scott P.

Thickness: N/A [ ] **Additional Staging Required** [ ] **UT Required** [ ] **X-Ray** [ ] **Code (ASME/ANSI) Repair**

Review/Comments: No issues. No NDE available.

ENGINEERING SECTION: **Fixed Equipment Inspector shall provide review of leak seal jobs originating during plant operation**

DPSE: Hill, William P. **Phone:** 2.3200 **Notified On:** ####### **DPSE:** Hill, William P.

Piping Class: DP1 **Metallurgy:** CS [ ] **Pressure Seal Valve**

EWO ID: **Design Pressure:** 3015 **Design Temperature:** 500F

Applicable Code: B31.3 **Clamp Reviewed/Approved:** Yes **Approved On:** #######

Design Review: Hy-Grade Lug Wafer Check Valve is leaking out out of the o-ring where the flapper/seat insert is installed into the

Lead Engineer: Hulse, Benjamin **Notified On:** 12/14/2011 **Signature:** Hulse, Benjamin **Completed By:** 12/14/2011

APPROVALS SECTION:

	Person Responsible	Notified On	Completed By	Completed On
HSE:	Siebert, Matthew J.	12/14/2011	Siebert, Matthew J.	12/14/2011
ABU Manager:	Pak, Johnny S.	12/15/2011	Pak, Johnny S.	12/15/2011
Operations Manager:	Chinn, Bruce E.	12/15/2011	Chinn, Bruce E.	12/15/2011
Maintenance Manager:	Peterson, Jay M.	12/15/2011	Walker, Kenneth B.	12/15/2011
Design Manager:	Kinkela, Donald F.	12/15/2011	Kinkela, Donald F.	12/15/2011

HEALTH & SAFETY EVALUATION

Date Issued: 12/13/2011 **Maximo Number:** 346659 **MOC Number** 24334

ABU: RLOP **EWO Number** **Filing Reference**

Plant: HNC 14 & 15 Plant **Person Responsible** Siebert, Matthew J.

Section 2 Reviewer: Seidlitz, Michael R. **Completed By** Siebert, Matthew J.

Project/Equipment Title: Leak Seal HNC Reactor Feed Check Valve **Date Completed** 12/14/2011

Description: Flange on check valve began to leak.

Step 1: ☐ Notify USW ☐ USW Representation Present **USW Representative:**

Worker's Committee Member/Steward's comments if unable to attend:

☐ Notify Trainer ☐ TrainerRepresentation Present **Training Representative:** Paul NORRIS

Step 2: **Involve: Operations, Maintenance, Technical and others with appropriate expertise relevant to the change (CRTC, Contractors, etc)**

Attendees: Patrick Park, Jimmy Than, BK White, Joe Santos, Mike Gajkowski, Kenny Garcia, John Barron, Ron Post, Bill Hill, Mumphrey Norris (TEMA), Steve Kavanagh, Fredrick Walker, Matt Siebert, Jason Hagberg, Dennis Steward

Step 3: **Think about the task at hand. Discuss the existing situation. Discuss the change. Discuss the impact of the change on the existing situation. Determine the training requirements for this change.**

Step 4: **Training Type:** 1

Develop a list of concerns, consider your options, consider your following:

*H2S *NH3 *Acid *Caustic *Benzene *Fall Protection *Staging *Scott Air *PPE *Hot Work *Confined Space Entry *Evacuation Plan *Safety Operator

Concern	Consequence	Mitigation	Proceed Safely
Sealant is temperature dependent	Sealant does not cure resulting in continuation of leak	TEAM will have different temperature sealants on hand	Yes
What is the temperature required to inject sealant?	Sealant does not cure resulting in continuation of leak	Inject sealant once feed is in (sealant works best at normal operating temperature)	Yes
Leak is sour recycle gas	Respiratory hazard	TEAM wears fresh air while performing work	Yes

HSE Action Items

Additional Comments

Discussed risk around cycling the leak (i.e. introducing feed). Technical feedback from Design Engineering is that leak will most likely stay the same or get better. This is a very small likelihood the leak will get worse. Valve was torqued ~x2 normal value in order to stop the leak (unsuccessful - this is why we are clamping).

Stage Two Training and Communication Review

5/21/2013 9:11:43 AM

MOC No: 24334

Date Completed: 12/16/2011

Completed By: Waldrop, Jason S.

Person Responsible: Waldrop, Jason S.

Project/Equipment Title:

Leak Seal HNC Reactor Feed Check Valve

Summary of Review:

Review completed, level 1 training notification sent

- [x] **Identify the affected employees.**
  - * **Maintenance and Technical affected?**
  - * **Employee who will require training to start up the change based on the level of training.**
  - * **Employees who will receive training after the start up BUT before they can perform work affected by the change**
- [ ] **Procedures have been modified/written (Ops/SSO/Trainer)**
- [ ] **Identify the affected employees..**
  - * **Lesson plan cover sheet (includes training objective statement and list of affected employees)**
  - * **Procedural changes (Standing Orders, mark-ups)**
  - * **Flow daigrams (final or mark-ups)**
- [ ] **Determine level of training**
- [ ] **Training has been scheduled**
- [ ] **Affected employees have been trained in order to start up the change.**

APPENDIX III

PRE-START-UP SAFETY REVIEW CHECKLIST

You have been assigned a Pre Start-Up Safety Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

Passport No:	346659	**MOC Number**	24334
EWO No.:		**Filing Reference**	
MOC PSSR.:	24334.001	**Person Responsible**	Perez, Carlos R.
		Completed By	Perez, Carlos R.
		Date Completed	12/16/2011

Project/Equipment Description:

Leak Seal HNC Reactor Feed Check Valve

Subsystem:

NOT The PSSR facilitator shall involve employees with expertise in process operations, maintenance, and engineering, based upon their experience and understanding of the process system being evaluated.

The following requirements for PSSR shall be addressed:	**Approved by:**	**Date**
1. Has the equipment and construction been completed in accordance with the critical design specifications? Some examples of how this may be accomplished are: * Review of equipment quality assurance and inspection records. * Review of construction inspection records. * P & ID "check" after mechanical completion, and facility "walk-through" inspection. **Justification:** Designed and installed by Team	Perez, Carlos R.	12/16/2011
2. Are Safety, operating, manintenance, and emergency procedures in place and adequate? * The phrase "in place and adequate" means: written, reviewed, approved, and accessible to employees requiring the procedures in their work. * This does not prevent the use of "mark-up" procedures to satisfy the requirement, but these must undergo the same review and approval and training interaction as would "the final version" of the same procedure and would require rigorous control. **Justification:** Yes	Perez, Carlos R.	12/16/2011
3. Has the communication or training of affected operating, maintenance, or contract workers been completed? * Maintenace employees, contractors, and other employees whose work is affected by the change must be informed of the change and training in the impact on their job tasks before the changed equipment is started up. **Justification:** Yes	Perez, Carlos R.	12/16/2011
4. Have the quality assurance goals of mechanical integrity been met? * Ensure that changes are suitable for the intended service. * Ensure that the quality of the work is acceptable. * Ensure that the quality of the Leak Seal is acceptable. **Justification:** Pressure held at 3000 PSI	Perez, Carlos R.	12/16/2011
5. Have all recommendations resulting from PHA's or HSE's been addressed of resolved * Ensure tall Recommendations have been documented as addressed or resolved	Perez, Carlos R.	12/16/2011

APPENDIX III

PRE-START-UP SAFETY REVIEW CHECKLIST

You have been assigned a Pre Start-Up Safety Review. This checklist is a guide to help ensure that all information necessary to evaluate the change is considered.

Passport No:	346659
EWO No.:	
MOC PSSR.:	24334.001

MOC Number	24334
Filing Reference	
Person Responsible	Perez, Carlos R.
Completed By	Perez, Carlos R.
Date Completed	12/16/2011

Project/Equipment Description:

Leak Seal HNC Reactor Feed Check Valve

Subsystem:

Justification: yes

Are there any safety-related exceptions encountered during the PSSR that require follow-up after started up? ☐ **Yes**

Miscellaneous Comments:

Exposed piping around leak seal area to remain taped off until leak seal verified good. Then permanent insulation to be reinstalled.

Exception	*Owner*	*Due Date*	*Completed By*	*Completed On*	*Required Prior to S/U*
Uninsulated piping around leak seal area	Mitchell, Patrick D.	1/31/2012	Mitchell, Patrick D.	1/17/2012	No

PSI REVIEW CHECKLIST

MOC Number	24334
Filing Reference	
Person Responsible	McCall, Patrick D.
Completed By	McCall, Patrick D.
Date Completed	2/14/2013

Project/Equipment Title:

Leak Seal HNC Reactor Feed Check Valve

PSI Documents

Typ	Numbe	Owne	Markup Date	Final Date		Document UR	
TEAM Clamp Design for #1 Cla					Brows	\\ric841vmg3web1\psidocs$\2	Open
TEAM Clamp Design for #2 Cla					Brows	\\ric841vmg3web1\psidocs$\2	Open
Sketch of Hy-Grade Lug Wafer					Brows	\\ric841vmg3web1\psidocs$\2	Open
Photo of Check Valve in Field					Brows	\\ric841vmg3web1\psidocs$\2	Open
HY-Grade Check Valve Spec's					Brows	\\ric841vmg3web1\psidocs$\2	Open
Valve Data Information Photos					Brows	\\ric841vmg3web1\psidocs$\2	Open

SUMMARY OF REVIEW*

Check valve has been replaced, leak seal removed.

*When possible include copies of documents referenced in the summary.